REMARKS

Claims 1 - 20 are currently pending in the application. By this amendment, claim 16 is amended for the Examiner's consideration. The above amendments and added claims do not add new matter to the application and are fully supported by the specification. Reconsideration of the rejected claims in view of the above amendments and the following remarks is respectfully requested.

Entry of Amendment is Proper

Applicants submit that the entry of the amendment is proper since no new issues are raised that would require further search and/or consideration. Claim 16 has been amended, in accordance with the Examiner's suggestion, to independent form. Claim 16 includes all of the features of claim 1, as in the previously presented form of claim 16. This being the case, claim 16 is only amended for form, and no additional features are being placed therein. Accordingly, since no additional features are placed in claim 16, there are no new issues that require further search and/or consideration. Applicants submit that the amendments made herein also place the application in better form for appeal by addressing the Examiner's rejection under 35 U.S.C. §112, 2nd paragraph.

Allowed Claims

Applicants appreciate the indication that claim 12 contains allowable subject matter. Claim 12 was previously amended to include the features of base claim 1 and any intervening claim. Claim 12 should thus be considered allowed. Applicants submit that all of the remaining claims are in condition for allowance for the following reasons.

Information Disclosure Statement

Applicants appreciate the consideration of the references cited in the form PTO-1449 dated February 18, 2005.

35 U.S.C. §112 Rejection

Claim 16 was rejected under 35 U.S.C. §112, 2nd paragraph. This rejection is respectfully traversed.

Although Applicants consider claim 16 to be a proper dependent claim, in order to expedite the examination process, claim 16 has been amended into independent format to include all of the features of claim 1. This should overcome the Examiner's concerns and hence withdrawal of the rejection is proper.

35 U.S.C. §103 Rejections

Claims 1-4, 7, 13, 16, 17 and 20 were rejected under 35 U.S.C. §103(a) over U.S. Patent No. 6,299,512 to Costa et al. in view of U.S. Patent No. 2,162,279 to Herchenrider. Claims 1, 2, 4, 5, 7, 9, 11, 13 and 16-19 were rejected under 35 U.S.C. §103(a) over U.S. Patent No. 2,586,848 to Miller in view of Costa. These rejections are respectfully traversed.

Rejection of Claims 1-4, 7, 13, 16, 17 and 20

As previously discussed, the claimed invention is directed to a sanding machine which includes a retaining device for creating oscillating sanding movement and an activating device for creating reciprocating movement. The activating device is moved independently of the oscillating sanding movement. The superimposed movements, not synchronized with one another, of the retaining device (i.e., oscillating sanding movement) and the activating device (i.e., reciprocating movement) ensure that a regular sanding pattern, that would result from oscillating sanding movement alone, is eliminated.

In pertinent part, claim 1 recites,

> ... an activating device having a multiplicity of activating regions triggered in such a way that various regions of the abrasive are alternately pressed onto a workpiece by the activating regions independently of the oscillating sanding movement.

Claim 17 recites, in pertinent part,

> a retaining device mounted to a frame by at least one displaceable eccentric shaft for setting an abrasive in an oscillating sanding movement with respect to a workpiece; and
>
> an activating device which is activated independently of the oscillating sanding movement, the activating device having a multiplicity of activating regions such that the independent movement of the activating device alternately activates various regions of the abrasive.

Claim 16 recites the combination of alternate activation of various activating regions of the abrasive independently of the oscillating sanding movement by pressing the activating regions onto the workpiece.

The Examiner is of the opinion that Costa shows all of the features of claim 1 (and claims 16 and 17), except for the activating device having multiplicity of activating regions triggered in such a way that various regions of the abrasive are alternately activated independent of the oscillating sanding movement. The Examiner is of the opinion, though, that Herchenrider shows these features, and in particular, that Herchenrider discloses that a roller (27) pressing the abrasive against the workpiece has a multiplicity of activating regions (29 or 31) and that the separate regions allow the abrasive to form to the uneven or irregular areas on the surface being ground. Applicants submit that the combination of features of Costa and Herchenrider do not show various regions of the abrasive are alternately pressed onto a workpiece by the activating regions <u>independently</u> of the oscillating sanding movement.

By way of discussion, Costa discloses a pair of spaced apart and parallel eccentric shafts 38A and 38B which are designed to impart translational orbital movement to a sanding head 20 (col. 3, lines 60-63). An endless sanding belt 32 is entrained around an upper tension roller 22 and a lower contact roller 24 (col. 3, lines 53-54), which is designed to impart rotational movement of the endless sanding belt 32. The contact roller is <u>coupled directly</u> to both the eccentric shafts (38A and 38B) and the pulley 48 and, as such, the contact roller is designed to

move the endless sanding belt 32 in both the translational orbital movement and the rotational movement. However, the belt sanding machine of Costa cannot and is not designed to move independently in either the translational orbital movement or the rotational movement. Thus, the belt sanding machine of Costa provides simultaneous superimposed movements comprising rotation of the sanding belt about the tension roller and contact roller and translational orbital movement of the sand belt (col. 4, lines 55-56) via the eccentric shafts.

It should be understood from a fair reading of the Costa reference that the endless sanding belt 32 is moved simultaneously in both the rotational and translational orbital movement. This is due to the fact that the contact roller is coupled directly to both the eccentric shafts (38A and 38B) and the pulley 48. As such, the contact roller is not designed to move independently in either the translational orbital movement or the rotational movement but, it is rather designed to move in both the translational orbital movement and the rotational movement. Thus, even if a skilled artisan were to modify the contact roller to include activating regions, it would not be possible to have activating regions triggered in such a way that various regions of the abrasive are alternately pressed onto a workpiece by the activating regions independently of the oscillating sanding movement.

Instead, if activating regions were placed on the contact roller, at each contact position a constantly defined portion of the surface of the abrasive would be contacted with the workpiece since the contact roller would be rotating in a constant relation to the sanding belt. At this time, the contact portions of the abrasive are kept constant and are not alternately activated. Thus, the activation of the multiplicity of activating regions would be coupled to the rotational speed of the contact roller and directly coupled to the oscillating movement since the contact presser roller of Costa is driven to perform the oscillating sanding movement. Consequently, the activating regions of the presser roll of Herchenrider, in combination with the Costa belt sanding machine, would not result in activating regions of the abrasive being alternately activated independent of the oscillating movement as recited in claims 1, 16 and 17.

Examiner's Response to Arguments

In considering Applicants' previous arguments, the Examiner maintains that the activation of the specific regions is caused by the rotational movement of the contact roller, not the oscillating movement, thus the various regions would still be activated/deactivated if the oscillating movement were not applied to the device. Therefore, according to the Examiner, activation of the various regions is independent of the oscillating movement. And, in view of this, the Examiner maintains that the oscillating movement of the roller and the vertical movement that may be imparted by the actuators 72A-D both provide motion that is transverse to the feed direction of the workpiece.

Applicants maintain that it remains the case that the rotational movement of the Costa belt sanding machine cannot meet the features of the claimed invention, i.e., there would not be an activating device having a multiplicity of activating regions triggered in such a way that various regions of the abrasive are alternately pressed onto a workpiece by the activating regions independently of the oscillating sanding movement. Instead, if activating regions were placed on the contact roller, at each contact position a constantly defined portion of the surface of the abrasive would be contacted with the workpiece since the contact roller would be rotating in a constant relation to the sanding belt.

And, in any event, the modifications suggested by the Examiner would clearly be contrary to MPEP §2143.01. By way of discussion, MPEP §2143.01 clearly states that

> Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art.

However, as argued above, in Costa, the contact roller is coupled directly to both the eccentric shafts (38A and 38B) and the pulley 48 and, as such, the contact

roller is not designed to move independently in either the translational orbital movement or the rotational movement but, it is rather designed to move in both the translational orbital movement and the rotational movement. As clearly disclosed in Costa, both the oscillating movement and the translational movement are designed to work together in order to provide the advantages of the Costa belt sanding machine. This being the case, there simply is no teaching in Costa to selectively apply the oscillating movement. To do otherwise, would be not only impermissible hindsight reasoning, but also an impermissible reconstruction of the Costa device.

Additionally, MPEP §2143.01 (V) states, in part:

> If proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984).

And, MPEP §2143.01 (VI) states, in part:

> If the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959).

Again, by making the modification as suggested by the Examiner, the Costa reference would be rendered unsatisfactory for its intended purpose. That is, there would not be two types of movement which are required to obtain the enhanced finish as contemplated by Costa. Moreover, such modification would clearly change the principle operation of Costa, i.e., only having a rotational movement since oscillating movement would be eliminated.

Furthermore, the applied references do not teach or suggest many of the features of the dependent claims. For example, no proper combination of the applied references teaches or suggests that the activating device can be moved

transversely to a feed direction of the workpiece to be sanded, as recited in claim 3. To the contrary, neither of the rollers of Costa and Herchenrider can be triggered such that various regions of the abrasive are alternately activated independently of the oscillating sanding movement transversely to a feed direction of the workpiece to be sanded. In fact, as should be understood, since these are rollers oriented in a same direction of the workpiece to be sanded, such a configuration as recited in the claimed invention is not possible by these references.

Accordingly, Applicants respectfully request that the rejection over claims 1-4, 7, 13, 16, 17 and 20 be withdrawn.

Rejection of Claims 1, 2, 4, 5, 7, 9, 11, 13 and 16-19

As previously discussed, Miller shows several different embodiments of an activating platen used with a conventional type belt sanding apparatus. The belt sanding apparatus performs two separate motions, one is the motion of the sanding belt relative to the workpiece, and the other is the change of various regions of the abrasive alternately pressed onto the workpiece. However, and as admitted by the Examiner at page 9 of the office action, Miller does not teach or suggest the oscillating sanding movement, as recited in claims 1, 16 and 17. In fact, Miller does not even disclose various regions of the abrasive are alternately pressed onto a workpiece by the activating regions independently of an oscillating movement.

Additionally, the Miller reference comprises a soft core or body portion 28 of rubber or other suitable material in order to provide a soft contact of the sanding belt 24 and the plate, which is to be sanded. The rubber soft core 28 and rubber shoes 29 results in that the pressure roll 26 remains in contact with the sanding belt. The relative motion of the pressure roll 26 and the surface belt 24 is impossible with the roll 26. The pressure roll will follow the motion of the sanding belt and vice versa. In contrary to the function of the pressure roll 26 of Miller, the present invention requires the relative motion of the activating device and the abrasive in order to achieve a pressure of various regions of the abrasive

independently of the oscillating sanding movement. Thus, the activating device performs a relative movement to the abrasive, whereas, in Miller, the pressure roll follows the motion of the abrasive.

The Examiner maintains that Costa shows the oscillating movement. Although Costa shows an oscillating movement, the combination of references still do not teach or suggest various regions of the abrasive are alternately pressed onto a workpiece by the activating regions independently of the oscillating sanding movement. As discussed above, Costa does not show an abrasive alternately pressed onto a workpiece by an oscillating movement. As such, the combination of references still do not show all of the features of the claimed invention. Therefore, the applied references, alone or in combination, do not teach or suggest every feature of claims 1, 16 and 17

Moreover, Applicants maintain that in Costa, the sanding occurs at the bottom of the lower contact roller 24. In Miller, the sanding occurs at the platen P-2 disposed at an intermediate portion of the belt between the upper and lower rollers. When combining Miller and Costa, because Costa's contact roller 24 could not be exchanged for the platen P-2 without destroying the operability of the Costa apparatus, the skilled artisan would arrange the platen of Miller in the area of the sanding belt between the upper tension roller and the contact roller. However, this location for the platen would have no effect on the sanding of the workpiece because the sanding belt contact the workpiece adjacent the lowest part of the contact roller.

Also, as previously argued, one could not simply provide the abrasive belt of Miller with the oscillating drive means of Costa, as asserted by the Examiner. The oscillating drive means of Costa drives the entire sanding head 20 of Costa, including the upper tension roller 22, the lower contact roller 24, and the belt 32. This results in translational movement of the lowermost point of the contact roller 24 in the plane where the belt 32 contacts the workpiece WP. Making such a modification to Miller would result in the same oscillation of upper roller 121, lower roller 122, and belt B-2 (FIGS. 8 and 9). However, such a modification would not provide oscillating translation motion in the plane where the belt B-2

contacts the workpiece W-2, but, instead, would cause it in a plane that is substantially perpendicular thereto. Such movement would be detrimental for at least two reasons. First, it would repeatedly bring the belt B-2 into and out of contact with the workpiece W-2, thereby increasing sanding time. Secondly, it would repeatedly strain the belt against the platen P-2 and/or the workpiece, and possibly interfere with the platen drive mechanism 136 and 137, thereby increasing wear (i.e., decreasing the useful life) of the belt. Therefore, for at least the above-noted reasons, there is no reasonable expectation of success of combining Miller and Costa as proposed by the Examiner.

Moreover, Miller and Costa, alone or in combination, do not teach or suggest many of the features of the dependent claims. For example, no proper combination of Miller and Costa teaches or suggests wherein the abrasive is mounted on a retaining device and the retaining device is mounted with the oscillation drive means on a sanding machine frame in order to set the retaining device, relative to a sanding machine frame, in a sanding movement oscillating parallel to a sanding plane, which is defined by a sanding surface of the abrasive, as recited in claim 9. To the contrary, as described above, modifying Miller by adding the oscillating drive means of Costa would necessarily result in oscillating movement that is perpendicular, not parallel, to the sanding plane defined by the sanding surface of the abrasive.

Also, Applicants still disagree with the Examiner's assertion that the activating device would inherently be coupled to the frame, as recited in claim 9. Applicants note the guidance provided by MPEP §2112 on the subject of inherency:

> The fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic. ... To establish inherency, the extrinsic evidence must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain

> thing may result from a given set of circumstances is not sufficient.

Applicants submit that an activating device, such as Miller's platen and associated drive mechanism, is not necessarily coupled to a machine frame, and that, instead, the Examiner is improperly relying on probabilities or possibilities.

Accordingly, Applicants respectfully request that the rejection over claims 1, 2, 4, 5, 7, 9, 11, 13 and 16-19 be withdrawn.

Rejoinder

Applicants respectfully submit that claim 1 is an allowable generic claim. Accordingly, rejoinder of claims 6, 8, 10, 14 and 15 is respectfully submitted as being proper.

CONCLUSION

Applicants appreciate the indication of allowable subject matter; however, in view of the remarks, Applicants submit that all of the claims are patentably distinct from the prior art of record and are in condition for allowance. The Examiner is respectfully requested to pass the above application to issue. The Examiner is invited to contact the undersigned at the telephone number listed below, if needed. Applicants hereby make a written conditional petition for extension of time, if required. Please charge any deficiencies in fees and credit any overpayment of fees to Attorney's Deposit Account No. 19-0089.

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